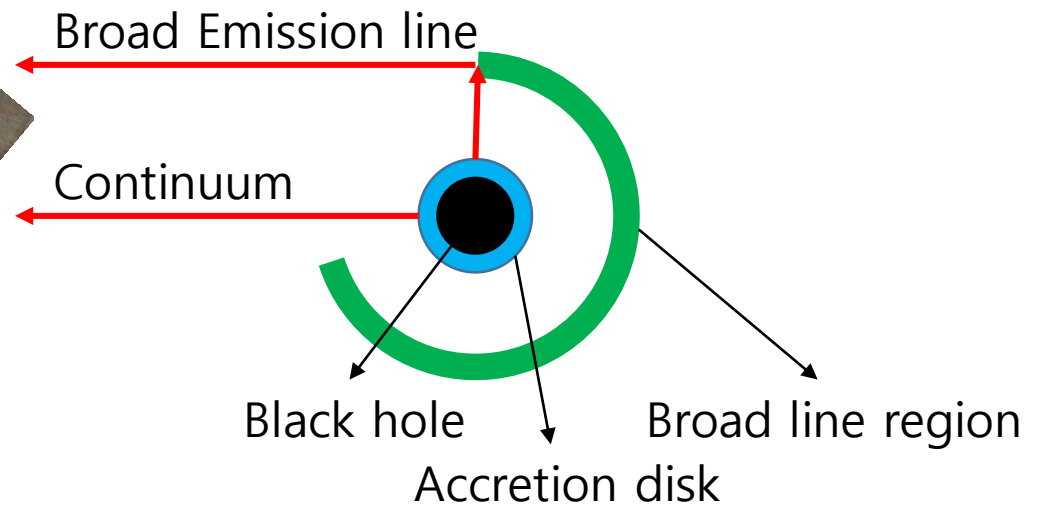
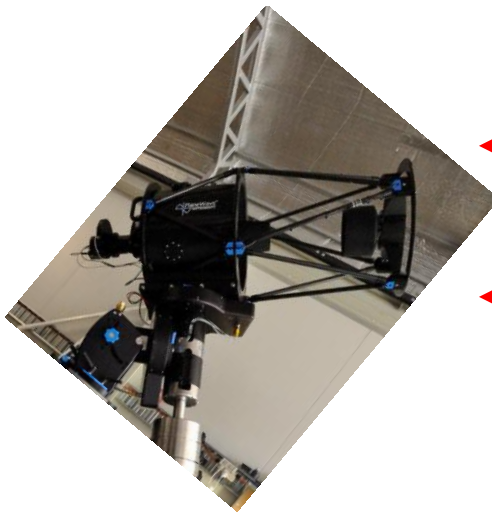


Reverberation Mapping of AGNs with Medium-band Photometry

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Reverberation mapping

- Spectroscopic monitoring
- Time lag between continuum and broad emission line
→ BLR radius & SMBH mass



Cosmological importance

- SMBH mass
→ Coevolution of SMBH and host galaxy
- BLR radius - AGN luminosity relation
→ Distance indicator → Cosmological expansion

Photometric way

- However, spectroscopic monitoring is expensive
→ Photometric monitoring with medium-band filters

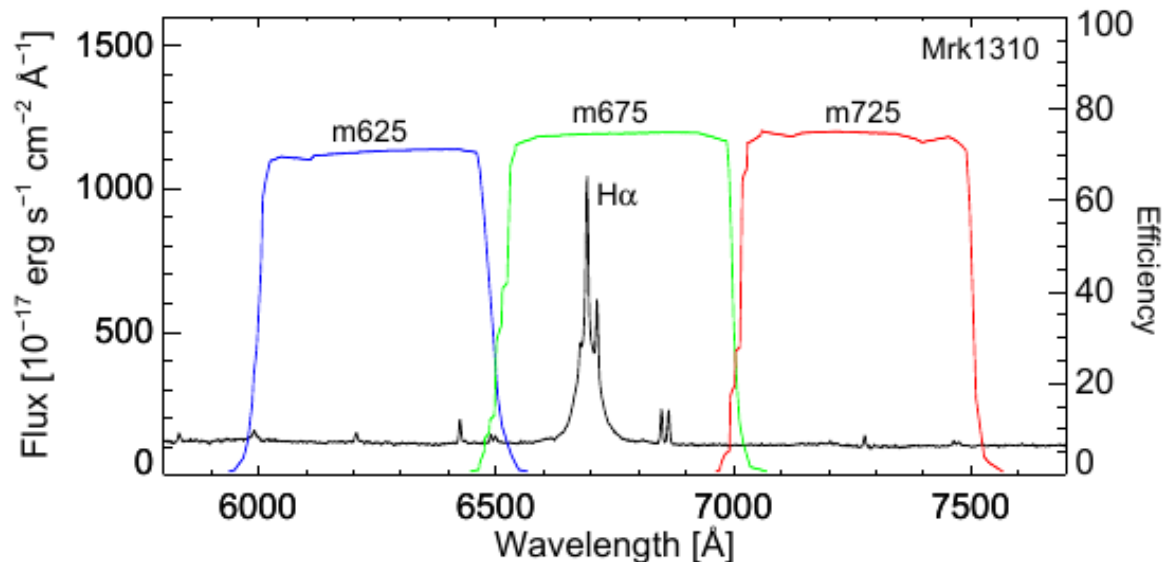


Figure 1: SDSS spectrum of Mrk1310 and transmission curves of each medium-bands. As shown, m675 covers H α emission line and others cover continuum.

Result

Table 2: Measured time lag of five AGNs.

Name	Time lag [This study]	Time lag [Previous study]	Reference
Mrk1310	$1.5^{+8.2}_{-3.3}$	$4.5^{+0.7}_{-0.6}$	Bentz et al. 2010
NGC4593	$3.3^{+0.4}_{-0.2}$	$3.2^{+5.6}_{-4.1}$	Peterson et al. 2004
NGC4748	$11.9^{+5.3}_{-2.6}$	$10.8^{+3.1}_{-3.1}$	Bentz et al. 2010
NGC6814	$9.7^{+0.4}_{-0.4}$	$9.6^{+2.2}_{-1.7}$	Bentz et al. 2010
NGC7469	$15.9^{+0.3}_{-1.7}$	$4.6^{+1.7}_{-1.3}$	Peterson et al. 2004
		$10.9^{+3.5}_{-1.3}$ ($H\beta$)	Peterson et al. 2014

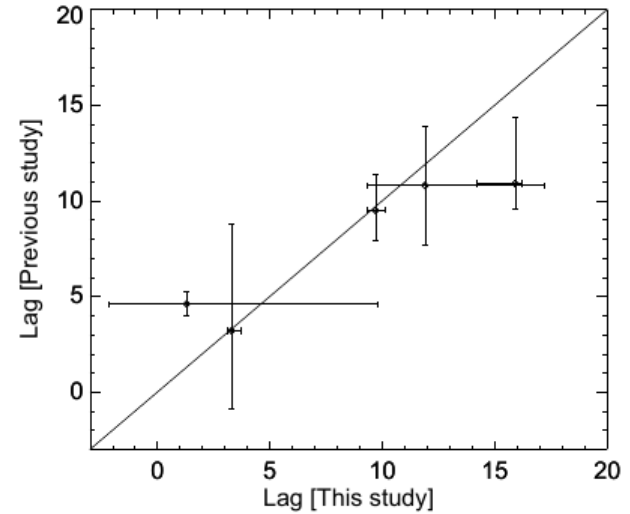


Figure 7: Comparison of the time lag between this study and previous studies.